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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,719	07/28/2006	Tsuyoshi Maegawa	038788.57892US	2032

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EXAMINER

ROBINSON, LAUREN E

ART UNIT	PAPER NUMBER
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1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,719	Applicant(s) MAEGAWA, TSUYOSHI	
	Examiner LAUREN ROBINSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ubuichi et al. (JP 11-228177) as evidenced by Optel Vision.

Regarding claim 1: Using the English machine translation, Ubuichi et al. teach a ceramic color layer formed on part of an automotive train window glass surface using a ceramic color composition paste (0001, examples). The paste is comprised of 88 wt % of a pigmented frit and 12 wt % of additional pigment as illustrated in Example 1. Ubuichi teaches that the pigment comprising the pigmented frit and additional pigment (0036) is black which will be provided with green coloring due to chromium oxide (0018). To determine the concentration of green chromium oxide pigment within the total greenish black pigment, Example 1 within the following table is provided.

	実施例 1	
PbO	35.9	
SiO ₂	29.5	
B ₂ O ₃	11.6	
Al ₂ O ₃	—	
TiO ₂	2.5	← Frit
ZrO ₂	—	
ZnO	—	
Li ₂ O	0.8	
Na ₂ O	1.0	
K ₂ O	—	
F	0.7	
Cr ₂ O ₃	11.0	
CuO	6.0	← Greenish black pigment
MnO	1.0	
Fe ₂ O ₃	—	
Paste composition		
ガラス粉本	88	← Total pigmented frit (88 wt %)
無機顔料	12	← Additional black pigment (12 wt %)
有機顔料	4.0	
有機顔料の種類	(A)	
ペースト粘度 (po)	350	
被成膜厚 (μm)	7	
透過率 (%)	0.15	← Visible transmittance

From above, the

pigment within the pigmented frit makes up 18 wt % of the 88 wt % pigmented frit in the paste and this corresponds to the pigment from the pigmented frit making up 15.84 wt % of the overall paste ($88 \times 0.18 = 15.84$). With the addition of the additional black pigment, the overall mixture of pigment (green and black) concentration in the paste will be 27.84 wt % ($15.84 \text{ wt \%} + 12 \text{ wt \%} = 27.84 \text{ wt \%}$).

Specifically the above green chromium oxide comprises 11 wt % of the 88 wt % thereby corresponding to 9.68 wt % of the paste being green pigment from the pigment within the pigmented frit ($88 \times 0.11 = 9.68$). Since this amount of green pigment is part of the total 27.84 wt % pigment mixture, this will provide for 34.8 wt % of the total (100 wt %) pigment mixture (black and green) meeting applicants' limitation.

Also, as illustrated above, the paste on the glass surface will obtain a visible transmittance of less than 0.3 % (Table, 0041). However, Ubuichi does not teach the transmitted color or reflected color values in the manner observed as claimed in claim 1 or the claimed UV transmittance.

While not specifically taught, the examiner notes that according to applicants' disclosure, what appears to be the critical feature providing the color values as well as the UV transmittance is the ratio of green to black pigment. For example, applicants illustrate from their examples 1 and 2 that green to black ratios from 30:70 in example 1 to 60:40 in example 2 will obtain the claimed values. From the above example 1, the amount of green to black falls within this range (34.8: 65.2). Also, within applicants' examples, they illustrate that their black pigment is comprised of a mixture of copper oxide, manganese oxide and chromium oxide and their green pigment is chromium oxide. Within Ubuichi, the overall pigment mixture is comprised of a mixture of chromium oxide, copper oxide and manganese oxide in the pigment in the pigmented frit as illustrated as well as the additional pigment (0036) and the chromium oxide is the green pigment within the greenish black pigment mixture. From this, the ratio of green pigment within the total is the same in the reference as in applicants' disclosure as well as the necessary materials used to produce said pigments.

Further, within the applicants' examples, they illustrate that the paste is comprised of a ratio of a low melting point frit to overall pigment being around 80:20. From example 1 within Ubuichi, 82 wt % of the frit, which is a low melting point frit (0035), comprises the 88 wt % pigmented frit. Therefore, 72.16 wt% of the paste is the

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glass frit ($88 \times 0.82 = 72.16$) and as such the ratio of frit to overall pigment within the paste is 72.16:27.84. While this ratio is not specifically 80:20, the applicants' include that only "about" is needed and therefore, this is not limiting and one would know that this would allow for values above and below and since the ratio within the reference is so similar to values that would be slightly under 80 and above 20, one would expect the paste of the reference to act similarly to applicants.

From what is discussed above about the pigmented materials being the same, the necessary ratio of green to total green and black pigment mixture, similar ratio of frit to pigment, as well as optical properties such as UV transmittance being the same, it is the examiner's position that one of ordinary skill would reasonably expect that the applicants' claimed characteristics would be inherently present absent an objective showing to the contrary.

Alternatively, one would have found these characteristics to be obvious optimizable properties. For example, it is known in the art that the claimed reflected and transmitted color properties can all be adjusted by varying the color and/or saturation of color (density, amount, etc). For instance, Optel Vision illustrates that L^* refers to light or dark wherein the closer to zero, the darker the material, a^* refers to red and green color and b^* represents yellow and blue coloring. Since it is known to one with ordinary skill that color can change by adjusting the colors of the pigments therein (such as adding red, etc) or the amount of each therein (pale versus dark, what hue of blue such as turquoise or sky, dark green vs. light green, etc.), one would recognize how to optimize pigments to provide for any color properties including applicants' properties. Also, it

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would have been obvious to one of ordinary skill as Ubuichi discloses the desire throughout to obtain black coloring (low lightness), however, the black paste color can be adjusted as desired to obtain other colors and/or tones of black. Therefore, one of ordinary skill would recognize that the color can be adjusted to any value, and therefore the chromaticity values can be any value, by optimizing the amounts and/or type of pigments therein and through routine experimentation, desired results can be obtained.

Finally, it would be recognized by one with ordinary skill that UV transmittance is a result effective variable that changes with optimization of color and/or concentration. For example, Ubuichi illustrates that the black pigmented paste aids in blocking UV transmittance (0002) and one would know that if more pigment was added, this would provide for more material doing the blocking and as such, more UV shielding will occur causing less UV transmittance. Therefore, since one would see low transmittance in Ubuichi to be desirable, they would find low values similar to applicants' to be obvious and they would know how to obtain such values.

As such, one would see that the pigments both concerning pigment type (color) and amount can be optimized to any color or amount and through routine experimentation; desired results regarding the properties above can be obtained. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Ubuichi to include that the pigment color used as well as the amount of pigment can be optimized to any value to provide for any desired color chromaticity values both reflected and transmitted for the glass as well as UV transmittance including applicants' claimed properties (**Claim 1**).

Regarding claim 2: Ubuichi et al. also teach that the above pigmented frit is comprised of the pigments and specifically a low melting point glass frit (0014-0016) **(Claim 2)**.

Regarding claim 3: As discussed, it was determined that the overall paste is comprised of a ratio of frit to pigment being 72.16:27.84. While this value is not specifically 80:20, claim 3 recites “about 80:20” which allows for values slightly above and below which is so similar to the one taught that one of ordinary skill would expect the paste to function similarly.

Alternatively the examiner notes that applicants' specific ratio would have been obvious. For example, one would know that by optimizing frit to pigment, the color of the paste will change. For instance, the frit is colorless and the pigment is colored and by adjusting the ratio, the desired coloring can be obtained. Specifically, in example 4 within Ubuichi, the frit can comprise 95 wt% of 85 wt% pigmented mixture and this corresponds to 80.8 wt % frit in the paste and the overall pigment in the paste is 19.3 wt % (5 wt % of 85 wt % = 4.25 pigment in pigmented frit + 15 wt % additional pigment = 19.3 wt %). Therefore, this allows for a ratio of 80.8:19.3 and illustrates that applicants' ratio can be used. Therefore, since the ratio can be used and one of ordinary skill would find that optimizing the ratio would have been obvious for coloring, one of ordinary skill in the art at the time of invention would have found it obvious to modify Ubuichi to include that the ratio within example 1 can have its ratio of frit to pigment optimized to any value while maintaining the green pigment to overall pigment ratio, in order to obtain desired color **(Claim 3)**.

Regarding claims 4-5: As discussed, the black pigment is a mixture of chromium oxide, copper oxide and manganese oxide (0036) (**Claim 4**) and chromium oxide acts as a green pigment therein (**Claim 5**).

Regarding claim 7: Further, since the pigments of example 1 are the same materials as used in applicants' disclosure which are green and black, the pigment mixture of example 1 is "consisting" of only green and black and meets applicants' claim 7 (**Claim 7**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as obvious over Ubuichi et al. (JP 11-228177).

Regarding claim 6: Although Ubuichi does not disclose the chromium oxide to the total pigment being within 60 to 80 wt %, the examiner notes that one of ordinary skill would recognize that this is a result effective variable and that by adjusting the amount of green pigment within the pigment mixture, the color will change such as a darker greenish black pigment, etc. and through routine experimentation of optimizing the amount of chromium oxide, one can obtain desired results. As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Ubuichi et al.

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to include that the amount of green pigment to the total pigment can be adjusted to any amount, including applicants' value, in order to obtain desired color.

Also, with this modification, one would recognize that the characteristics of claim 1 would still be produced as applicants' have illustrated in their examples that a ratio of 30: 70 to 60:40 green to total will still obtain the characteristics. Furthermore, if one desired to obtain more green color in the greenish black pigment which still obtaining a desired color chromaticity value of darkness, a^* , b^* and UV transmittance, they would know that the claimed amount of green to black as claimed can be used and that additional colored pigments such as blue, etc. and or amounts of additional pigment can be optimized to any value to obtain the desired properties as discussed (**Claim 6**).

Response to Arguments

Applicant's arguments filed August 26, 2008 with respect to the claims have been considered but are moot in view of the new ground(s) of rejection making the present action **Non-Final**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ROBINSON whose telephone number is (571)270-3474. The examiner can normally be reached on Monday to Thursday 6am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-2721540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren E. T. Robinson
Examiner
AU 1794

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